

- 1 1. The crux of the invention is the ballast weighted piston (8) as shown in claim 45,
2 page 7 line 15 through page 8 line 3, where I have used in part the phraseology and
3 semantics provided the "Examiner's Proposed Amendment". No other invention
4 uses ballast in the piston (8) to provide the pressure necessary to pump the fluid.
5 See patent application drawings figures 1-3.
- 6 2. The Hill ballast-weighted piston allows the pumping chamber to be defined by the
7 bottom of the surface of the ballast-weighted piston (8), cylinder walls (7) and
8 enclosed bottom of cylinder (13).
- 9 3. The Hill ballast-weighted piston (8) eliminates the need for an enclosed upper end as
10 the pumping chamber.
- 11 4. The Hill ballast-weighted piston (8) eliminates the need for a rigid shaft surrounded
12 by packing or sealing "O" rings on the upper end of the pumping chamber as the
13 pumping chamber is below the piston's bottom surface, the connector (4) is
14 connected to the top of the piston (8) and passes through the open top of the
15 cylinder (7).

16 Whereas the Hill connector (4) is an improvement as it –

- 17 1. By having the ballast in the piston (8), the connector (4) is always in a state of
18 tension in both the up and down stroke.
- 19 2. The Hill connector (4) under tension, raises the ballast-weighted piston (8), bringing
20 fluid in under the force of gravity on the upstroke and still under tension caused by